
Subject: Assist for include files

Posted by [raxvan](#) on Tue, 01 Feb 2011 10:06:38 GMT

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Hello,

I'm working to add to the ide a new feature similar to visual studio 2010. When the user types include and the the key < or " the window will PopUp having all the appropriate files in it.

I use as a reference the assist used to displaying function names.
So far so good, but i'm having some issues.

1. Apparently i can't figure out why normal assist will close when pressing Escape and my assist will not. Also i can't find any code related to that. I could just add a statement to take care of that but i don't know what other side effects this might have.
2. What would be the best approach: having the files scanned when the assist will open? or to scan the files in advance (when the package is loaded) and just fill the assist with already existent data.
3. What is the Key code for ""? because i can't figure it this out with the debugger.
4. Are there any hidden issues i have to address?

Thanks,
Raxvan.

Subject: Re: Assist for include files

Posted by [dolik.rce](#) on Wed, 02 Feb 2011 09:17:16 GMT

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Hi Raxvan

raxvan wrote on Tue, 01 February 2011 11:06I'm working to add to the ide a new feature similar to visual studio 2010. When the user types include and the the key < or " the window will PopUp having all the appropriate files in it.

I use as a reference the assist used to displaying function names.
So far so good, but i'm having some issues.

Good idea, although I have to warn you that it might not be as easy as it seems. I did attempt something similar once (showing annotation in the editor), but failed. AssistEditor code is quite a jungle

raxvan wrote on Tue, 01 February 2011 11:061. Apparently i can't figure out why normal assist will close when pressing Escape and my assist will not. Also i can't find any code related to that. I could just add a statement to take care of that but i don't know what other side effects this might have.The assist is handled at many different places, e.g. in AssistEditor::LeftDown() it is closed when you click in the editor. I guess (don't see the code right now) that closing on esc might be handled similarly. Anyway, I think it might be easy to actually extend current Assist behavior to do this than write a new one...

raxvan wrote on Tue, 01 February 2011 11:062. What would be the best approach: having the files scanned when the assist will open? or to scan the files in advance (when the package is loaded) and just fill the assist with already existent data. Depends on what exactly you want to show. If you restrict to files from packages in current project (which would be just fine IMHO), you can process this information very fast because it is already stored within theide. If you want to scan for files on disk than some clever pre-reading might be needed. Or you can cheat and suggest user some fixed set of standard system headers + the files in packages

raxvan wrote on Tue, 01 February 2011 11:063. What is the Key code for ""? because i can't figure it out with the debugger. It's \x22 (or 34 in decimal) or you can just write '\"'. Neat trick: In theide press Ctrl+E to show calculator, type '\"' and press enter

raxvan wrote on Tue, 01 February 2011 11:064. Are there any hidden issues i have to address? Nothing I am aware of right now, as long as it behaves like regular assist, it should be fine. In case you will be searching for files on disk, you should make sure it is very fast - slow dialogs are annoying for users

Also if you want to take part in theide development, you should probably ask Mirek for a Redmine account and create a feature issue in the issue tracker we just recently started to use

Best regards,
Honza

Subject: Re: Assist for include files

Posted by [raxvan](#) on Wed, 02 Feb 2011 10:30:22 GMT

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Hello,

dolik.rce wrote on Wed, 02 February 2011 10:17

Good idea, although I have to warn you that it might not be as easy as it seems. I did attempt something similar once (showing annotation in the editor), but failed. AssistEditor code is quite a jungle

I can see , but i find the ide code really easy to understand.

dolik.rce wrote on Wed, 02 February 2011 10:17

The assist is handled at many different places, e.g. in AssistEditor::LeftDown() it is closed when you click in the editor. I guess (don't see the code right now) that closing on esc might be handled similarly. Anyway, I think it might be easy to actually extend current Assist behavior to do this than write a new one...

I have that fixed now, the file assist opens and closes properly.

The next step left is populating the popup with proper stuff.

dolik.rce wrote on Wed, 02 February 2011 10:17

Depends on what exactly you want to show. If you restrict to files from packages in current project (which would be just fine IMHO), you can process this information very fast because it is already stored within theide. If you want to scan for files on disk than some clever pre-reading might be needed. Or you can cheat and suggest user some fixed set of standard system headers + the files

in packages

I want to show the files in all the assembly paths from the current project. Also the files from include directories. I'm thinking to do a scan in advance but in this case i have to handle all the changes (add file, remove file, etc).

dolik.rce wrote on Wed, 02 February 2011 10:17

It's \x22 (or 34 in decimal) or you can just write '\"'. Neat trick: In theide press Ctrl+E to show calculator, type '\"' and press enter

Fixed , the problem was in some other place , actually the key was equal to '\"' but the code was busted.

dolik.rce wrote on Wed, 02 February 2011 10:17

Also if you want to take part in theide development, you should probably ask Mirek for a Redmine account and create a feature issue in the issue tracker we just recently started to use

Will do , once i have a working beta of this.

Thanks,
Raxvan.

Subject: Re: Assist for include files

Posted by [dolik.rce](#) on Wed, 02 Feb 2011 11:21:41 GMT

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raxvan wrote on Wed, 02 February 2011 11:30dolik.rce wrote on Wed, 02 February 2011 10:17Good idea, although I have to warn you that it might not be as easy as it seems. I did attempt something similar once (showing annotation in the editor), but failed. AssistEditor code is quite a jungle I can see , but i find the ide code really easy to understand. Yes, once you *find* what you are looking for, then it is really easy to read

raxvan wrote on Wed, 02 February 2011 11:30I want to show the files in all the assembly paths from the current project. Also the files from include directories. I'm thinking to do a scan in advance but in this case i have to handle all the changes (add file, remove file, etc).

Is there some point to suggest non-project packages from assemblies? In 99% of cases you have to add the package to make any use of the headers inside. The files from include directories are different situation of course, and it makes sense to suggest them. I'd personally prefer creating a list at the start of theide and check for changes only on request (on Assist -> Rescan code). You will see how fast you can write it, if it would delay starting too much, you would have to do some trickery e.g. creating the list in a background task (can be done using callbacks).

Actually it would be nice if some of the present scanning was rewritten into separate threads... That would speed things nicely, since the disk I/O heavy task (including yours) could be done in background, while user could already work.

Honza

Subject: Re: Assist for include files

Posted by [raxvan](#) on Wed, 02 Feb 2011 12:55:38 GMT

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dolik.rce wrote on Wed, 02 February 2011 12:21

Is there some point to suggest non-project packages from assemblies? In 99% of cases you have to add the package to make any use of the headers inside. The files from include directories are different situation of course, and it makes sense to suggest them. I'd personally prefer creating a list at the start of the ide and check for changes only on request (on Assist -> Rescan code).

You are right, the only files you *should* use should already be in a package in current project. Therefore i will stick, for now, with these files only.

I think in visual studio the files are scanned on request based on the current path. This system allows the user to see files from paths such as "../Folder/etc". I personally believe this should not be allowed because paths like these are confusing. Therefore i will not implement something like this.

Raxvan.

Subject: Re: Assist for include files

Posted by [raxvan](#) on Thu, 03 Feb 2011 18:06:06 GMT

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Hello,

Here is a simple image with the work i have done.

The method chosen to scan the files is mixed. Some files are stored in a Vector and the rest of the files are scanned on demand.

The scanning is performed using the class CoWork (I suggest including this CoWork class into the main Ide class so other heavy operations, such as FindInFiles and Assist Code Scanner, to work in background).

The behavior is exactly like normal assist and ~95 % of it is already implemented/working/tested.

I have one question:

What type (or what methods) has a class to implement in order to work as a row in ArrayCtrl?

Because now i use AttrText and when i insert i can only use the current row in the ArrayCtrl.

I would like to have some extra data associated with each row in order to finish this.

I used Windows to develop this, but i think it should work fine with linux too.

Thanks,
Raxvan.

File Attachments

1) [demo.PNG](#), downloaded 408 times

Subject: Re: Assist for include files
Posted by [dolik.rce](#) on Thu, 03 Feb 2011 18:32:11 GMT

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That looks great

One hint: I believe that for the quoted style includes, only files from current package should be suggested. IIRC the gcc search for the file relatively to the current file, so if the other package was in different assembly, it might cause problem. Also it is IMHO a good coding style to use #include "file.h" only for "local" files.

Have you tested how the CoWork solution works on single core processor? (Or when you set affinity of the process to single core...).

Unfortunately, I can't answer the question about ArrayCtrl, as I don't know answer...

Looking forward to see the code

Honza

Subject: Re: Assist for include files
Posted by [raxvan](#) on Thu, 03 Feb 2011 18:50:22 GMT

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Hello,

When the include assist uses quotes ("") the current file is taken (theide->editfile) and a search is performed. I can see that 'editfile' variable holds the entire path to the current edited file , therefore i extract the path from that and i perform a search based on that path. This will give only "local" files/folders.

The only files stored and prescanned are the files from VC Include Directories + All files/folders from the current Assembly. I chose to store these files because the high count.

I can't test CoWork anywhere because i have no single core machines . CoWork is very simple to use (just Do(TTHISBACK(...))), and don't care how the function will run.) and i never encountered problems with this system. There will be more extensive testing later.

Using this required me to modify the current build configuration for the Ide to be multithreaded.

The "Loading..." message is there for a very short amount of time (~0.1 seconds or less) but i will keep it there in case of some existing heavy disk operations.

The icons and the look may not be final.

Raxvan.

Subject: Re: Assist for include files

Posted by [dolik.rce](#) on Thu, 03 Feb 2011 20:58:06 GMT

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raxvan wrote on Thu, 03 February 2011 19:50When the include assist uses quotes ("") the current file is taken (theide->editfile) and a search is performed. I can see that 'editfile' variable holds the entire path to the current edited file , therefore i extract the path from that and i perform a search based on that path. This will give only "local" files/folders. I guess it is more of a philosophical question Or matter of taste. My point of view is this: If I wan't to include something from other packages, I should include them first (so I don't forget to do it later). Secondly, if I wan't to include something from other package, I will always use <pkg/file.h> for a simple reason that another user might have different setup of assemblies (e.g. two nest from non-neighboring directories) and then "pkg/file.h" might not make sense. From this follows that a) only local package files can be shown when "" is pressed and b) only files from loaded packages can be suggested. Both of these cases save you scanning disk, since those files are already accessible through ide.Ideworkspace(). So the only thing that is IMHO really needed to be looked up on disk are the system headers from include directories and those doesn't change very often, so it might be even possible to cache the list in a single file to have it ready at start and check if it is up to date later (e.g. when the application is idle). That way you wouldn't even have to worry about speed. But that is all just my opinion, if you think you will need more files suggested or something else, you are free to do it

raxvan wrote on Thu, 03 February 2011 19:50I can't test CoWork anywhere because i have no single core machines . CoWork is very simple to use (just Do(THISBACK(...)), and don't care how the function will run.) and i never encountered problems with this system. There will be more extensive testing later.

Using this required me to modify the current build configuration for the Ide to be multithreaded. The "Loading..." message is there for a very short amount of time (~0.1 seconds or less) but i will keep it there in case of some existing heavy disk operations. You can test by instructing the process to use only single core using Task manager (there should be Set Affinity in context menu for each process on Processes tab) but if it is under 1 second it is probably OK even if it was executed in serial.

Honza

Subject: Re: Assist for include files

Posted by [raxvan](#) on Fri, 04 Feb 2011 08:15:42 GMT

Hello,

I have created a rar file with the source files of the ide so everyone can test it. The code is not final, as you will see the path dose not support `..` and deleting a `/` will close the assist.

For fix these issues with a nice solution requires some thinking. This might delay the final product with 2-3 days.

My only concern is about linux (i haven't had any time to try it out) and filenames containing special characters. FindFile will only return a String not a WString.

<http://dl.dropbox.com/u/9887398/ide.rar>

Raxvan.

Subject: Re: Assist for include files

Posted by [dolik.rce](#) on Fri, 04 Feb 2011 11:40:59 GMT

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Hi Raxvan

It works quite fine on my Arch Linux Only problem I noticed is that the system include files are not suggested. I'll try to figure out why...

Also to make it compile, I had to do a little changes in IncludeFileDialogClass::Paint0() because Clang refused to compile "Image & img = BrowserImg::IncludeFile()", so I had to change it to "Image img = ..." .

One thing that should be definitely changed is the "ToUnicode(txt, CHARSET_WIN1250)", I think there should be GetDefaultCharset() or something like that.

I'll probably post more ideas after I have some time to dig in the code a bit

Honza

PS: Could you use same icons as the rest of theide? It feels a bit distracting

Subject: Re: Assist for include files

Posted by [raxvan](#) on Fri, 04 Feb 2011 12:29:04 GMT

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Hmm ,

I think you have to look into the function void AssistEditor::ScanFrontFiles() and see what paths are chosen for the search.

The line `Vector<String> tmp = SplitDirs(GetVar("UPP") + ';' + BuildMethodMap.Get("INCLUDE", ""));` is supposed to get all of them.
Please check if function `NativePath(tmp[i]+"\\"*)` will return the correct path.

The charset `CHARSET_WIN1250` was chosen from the original assist. There, the function that inserted code into the source was `"Paste(ToUnicode(txt, CHARSET_WIN1250))"`

The icons are not final, i can easily change them , but i like the ones i used more .

Thanks,
Raxvan.

Subject: Re: Assist for include files
Posted by [raxvan](#) on Fri, 11 Feb 2011 18:09:46 GMT
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Hello,

I have created a new archive with the latest version of the Include Assist.
There have been some major modifications and this one is almost the final one.
I will post a more detailed description of the progres later.
<http://dl.dropbox.com/u/9887398/ide.rar>

Raxvan

Subject: Re: Assist for include files
Posted by [raxvan](#) on Sat, 12 Feb 2011 14:11:14 GMT
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Hello,

New images:

Subject: Re: Assist for include files
Posted by [koldo](#) on Sat, 12 Feb 2011 18:56:43 GMT
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Hello Raxvan

It is a nice feature .

It works fine for me in Windows XP, although it has got an exception and it does not let me enter a Bazaar folder.

Subject: Re: Assist for include files

Posted by [raxvan](#) on Sat, 12 Feb 2011 19:31:22 GMT

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Hello,

I have changed the source code and i hope this is the final version.I found that if i compile for speed the system doesn't work at all in linux. Also i have to test this version for windows to check that everything is working before i will post a new release.

koldo:

The path to the Bazaar must be specified in your current assembly.

Anyway, the code has changed again, so i hope that this version has everything working

Raxvan.

Subject: Re: Assist for include files

Posted by [raxvan](#) on Sat, 12 Feb 2011 23:14:33 GMT

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Hello,

I have attached a patch for the latest IDE revision. The source code is almost complete and i tested this in linux and windows. It works fine with one exception: When compiling the ide for speed in linux the assist will not start.

Thanks,
Raxvan.

File Attachments

1) [ide.patch](#), downloaded 319 times

Subject: Re: Assist for include files

Posted by [koldo](#) on Sun, 13 Feb 2011 19:35:10 GMT

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raxvan wrote on Sun, 13 February 2011 00:14Hello,

I have attached a patch for the latest IDE revision. The source code is almost complete and i tested this in linux and windows. It works fine with one exception: When compiling the ide for speed in linux the assist will not start.

Thanks,
Raxvan.

Is it updated <http://dl.dropbox.com/u/9887398/ide.rar> ?

Subject: Re: Assist for include files

Posted by [raxvan](#) on Mon, 14 Feb 2011 07:06:39 GMT

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koldo wrote on Sun, 13 February 2011 20:35raxvan wrote on Sun, 13 February 2011 00:14Hello,

I have attached a patch for the latest IDE revision. The source code is almost complete and i tested this in linux and windows. It works fine with one exception: When compiling the ide for speed in linux the assist will not start.

Thanks,
Raxvan.

Is it updated <http://dl.dropbox.com/u/9887398/ide.rar> ?

Yes sir , updated , i posted two patches on redmine with the final code.

Also here:

http://dl.dropbox.com/u/9887398/IDE_MT.patch

http://dl.dropbox.com/u/9887398/IDE_ST.patch

Raxvan.

Subject: Re: Assist for include files

Posted by [koldo](#) on Mon, 14 Feb 2011 10:12:36 GMT

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Hello Raxvan

I have downloaded from here two hours ago:

- In Windows XP, MSC10 Speed it runs perfect. It is nice.
- In GNU/Linux/Ubuntu, GCC Speed I get an "Invalid Memory Access" exception when keying "Enter" after choosing the right .h file from the menu.

Subject: Re: Assist for include files

Posted by [raxvan](#) on Mon, 14 Feb 2011 11:32:57 GMT

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Hello,

I remember testing for ubuntu everything and i haven't encountered any problem. Anyway, you should test with the http://dl.dropbox.com/u/9887398/IDE_ST.patch because this is more likely to be the final version. The ST is modified by dolik.rce not to use CoWork but ProcessEvents on the same thread.

I will check the ubuntu version again when i have access to by system.

Raxvan.

Subject: Re: Assist for include files

Posted by [koldo](#) on Tue, 15 Feb 2011 14:52:06 GMT

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Hello Raxvan

Now it works perfect! . Linux and Windows.

Mirek: Could you try this feature?. It is nice.

Subject: Re: Assist for include files

Posted by [koldo](#) on Tue, 15 Feb 2011 21:39:45 GMT

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Hello Raxvan

It seems the menu appears always a " or a < is keyed.

Could it check if a "include" text is before?

Subject: Re: Assist for include files

Posted by [raxvan](#) on Tue, 15 Feb 2011 21:44:01 GMT

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Hello,

Some last minute changes introduced the bug.

I have fixed that now, but because this implementation is not using CoWork i'm having some strange random crashes.

Sorry for the delay, but i must investigate.
I will post a version once i'm done.

Raxvan.

Subject: Re: Assist for include files
Posted by [mirek](#) on Mon, 25 Apr 2011 15:53:59 GMT
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The IDE now has #include assist - I have used my own implementation.

Subject: Re: Assist for include files
Posted by [raxvan](#) on Wed, 27 Apr 2011 11:46:42 GMT
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Nice,

Looks good but the assist stops when i press "/" or "\\", also you can't do "../"

Raxvan.

Subject: Re: Assist for include files
Posted by [mirek](#) on Wed, 27 Apr 2011 16:46:39 GMT
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raxvan wrote on Wed, 27 April 2011 07:46Nice,

Looks good but the assist stops when i press "/" or "\\",

Thanks for hint, fixed.

Quote:
also you can't do "../"

Raxvan.

Frankly, I am not even sure what exactly is that supposed to mean...

Well, in case "../" I know, but should we consider <../> as well?

Mirek

Subject: Re: Assist for include files
Posted by [tojocky](#) on Wed, 27 Apr 2011 19:32:48 GMT
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mirek wrote on Wed, 27 April 2011 19:46raxvan wrote on Wed, 27 April 2011 07:46Nice,

Looks good but the assist stops when i press "/" or "\\",

Thanks for hint, fixed.

Quote:
also you can't do "../"

Raxvan.

Frankly, I am not even sure what exactly is that supposed to mean...

Well, in case "../" I know, but should we consider <../> as well?

Mirek
I use "../". I vote for this.

Subject: Re: Assist for include files
Posted by [raxvan](#) on Wed, 27 Apr 2011 19:57:28 GMT
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Yes , i was referring to "../path.h". The other combination <../x.h> is an abomination and if people would try to use this something will be divided by zero, and the world will drain down to a hole)

Note:

in my implementation i considered the following path to be valid:
<directory../stuff.h>, but i didn't handled <../stuff.h> because it doesn't make sense.

Raxvan.

Subject: Re: Assist for include files
Posted by [mirek](#) on Fri, 29 Apr 2011 13:19:23 GMT
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raxvan wrote on Wed, 27 April 2011 15:57Yes , i was referring to "../path.h".

Now supported...

Mirek

Subject: Re: Assist for include files
Posted by [raxvan](#) on Sat, 30 Apr 2011 08:03:45 GMT
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Nice .

I spotted a bug, but i don't really understand the implementation there and i can't fix it. Here is how it happens:

```
type
#include "
then backspace
then press "
you will notice that the assist is not opening.
```

Razvan.

Subject: Re: Assist for include files
Posted by [mirek](#) on Sat, 30 Apr 2011 09:29:42 GMT
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raxvan wrote on Sat, 30 April 2011 04:03Nice .

I spotted a bug, but i don't really understand the implementation there and i can't fix it. Here is how it happens:

```
type
#include "
then backspace
then press "
you will notice that the assist is not opening.
```

Razvan.

Works for me... Do you have latest revision?

Subject: Re: Assist for include files

Posted by [raxvan](#) on Sun, 01 May 2011 16:49:42 GMT

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yes, at revision 3388. I use ubuntu, i haven't test it in windows.

Subject: Re: Assist for include files

Posted by [mirek](#) on Sun, 01 May 2011 19:09:20 GMT

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Yep, in Linux reproduced...and fixed. Thanks for pointing this out.

Subject: Re: Assist for include files

Posted by [Lance](#) on Wed, 04 May 2011 13:50:37 GMT

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Very convenient! I like it.
